

## Remarks

Claims 1, 4, 9-11, 13 and 14 were pending.

Claims 9-11, are amended.

Claims 13 and 14 are as previously presented

Claim 4 is cancelled.

Claims 15 and 16 are new.

The application now contains claims 1, 9-11 and 13-16.

Claim 1 is amended to incorporate into component b the limitations of now cancelled claim 4 and to replace "comprising" in line 1 with "consists essentially of". Support is inherent in the claims.

Claims 9 and 11 are made independent and amended as below.

Claim 9 is amended to delete the phrase "according to claim 1" and to insert in its stead limitations from claim 1 and now cancelled claim 4 preceded by the phrase "consists essentially of", to delete the term "oil" from the other additives present at less than 5%, and to insert at the end of the claim the limitation "wherein the oil-based printing ink is an aromatic or hydrocarbon distillate based ink or a vegetable oil based ink". Support is found in claims 1, 4 and 9 and on page 7, lines 6-8 of the Specification.

Claim 11 is similarly amended to delete the term "the pigment composition" which follows "dispersing" in line 2 and to insert at the end of the claim limitations from claims 1 and 4 preceded by the phrase "a pigment composition consists essentially of". Claim 11 is further amended to replace the phrase "the printing ink according to claim 9" in the first line with "an oil-based printing ink for lithographic printing" and to specify that the lithographic printing ink system is aromatic or hydrocarbon distillate based or vegetable oil based. Support is as found for claim 9.

Claim 10 is amended to specify that the percentage of colorant is by weight. Support is found in the Specification, page 6 line 6.

Claims 15 and 16 are supported by claims 9, 13 and 14.

No new matter is added.

## Rejections

Claim 10 is rejected under 35 USC 112 second paragraph because it is not clear whether the percentages are based on weight or volume and whether it is a percentage of the entire composition or some portion of the composition. Applicants respectfully submit that the instant amendments make clear that the claim relates to an ink of which 5-50% of the weight of the ink is the instant pigment composition and kindly ask that the rejections be withdrawn.

Claims 1, 4 and 9-11, 13 and 14 are rejected under 35 USC 112 first and second paragraph because the Action finds that the phrase "rosin modified phenolic resin" is too broad and reads on an infinite number of species. Claim 4 is cancelled.

Applicants respectfully disagree.

Submitted along with a supplemental Information Disclosure Statement are chapters from Ulmann's Encyclopedia of Industrial Chemistry, Fifth Edition, vol A 19 (1991, VCH), Ulmann's Encyclopedia of Industrial Chemistry, Sixth Edition, vol 26 (2003, Wiley VCH), and Encyclopedia of Polymer Technology vol 10 and vol 12 (1969 and 2001 respectively, John Wiley and Sons). As the enclosed copies show, e.g., Ulmann's vol A 19, p 373 bottom of the first column, Ulmann's vol 26, p 3 column two, the term modified phenolic resin, or rosin-modified phenolic resin, encompasses a very restricted, defined range of compounds obtained from the reaction of the three well-defined starting materials phenol, formaldehyde and rosin (=abietic acid). (They are also referred to in Ulmann's encyclopedia as "albertol acids".) Thus the skilled artisan recognizes "rosin-modified phenolic resins" as a single type of polymer wherein the properties of individual species vary slightly as with other types of polymers, e.g., polyolefins, acrylates and polyethyleneterephthalates. Applicants respectfully note that polymers such as polyolefins or acrylates refer to a much broader, subdivided class of polymers while rosin-modified phenolic resin is a narrow, single type of polymer. Applicants further point out that neither manufacturers nor practitioners see any reason to mention more chemical details when referring to "rosin-modified phenolic resin" as this is a well known and accepted term in the field.

Applicants therefore respectfully submit that the characterization in the present Action that "The specification does not reasonably provide enablement for all the 'rosin-modified phenolic resins' encompassed by the instant claims" is not supported by the facts. There is not a "potentially infinite number of modifications", the modification of the phenol/formaldehyde resin is always by the same reaction with rosin.

In light of the above discussion, Applicants respectfully submit that the rejections of instant claims 1, 9-11, 13 and 14 under either 35 USC 112 first or second paragraph are overcome and kindly ask that the rejections be withdrawn.

Claims 1, 4 and 9-13 are rejected under 35 USC 103(a) as being obvious over Tregub et.al., US 6,099,63. Claim 4 is cancelled.

Applicants respectfully traverse the rejections.

Applicants respectfully note that when considering the art, one must consider the entire document. An "as a whole assessment" of the art requires a showing that it would have been obvious for one to have selected each of the elements of the claimed invention when confronted by the problems addressed by the inventor based on what was clearly known or disclosed at the time. This is particularly true when a large number of non-exemplified materials or combinations are generically disclosed without any guidance as to which ones would be best suited for the desired purpose.

Paragraphs 3 and 4 on page 1 of the instant Specification describe the problem/solution: "Many oil-based inks, especially vegetable oil-based lithographic printing inks, are prone to an uptake of fountain solution in areas of shear, e.g. at the ink/fountain contact where the ink duct rollers meet the fountain press drum. This intimate contact of the fountain solution and the ink causes an emulsification and the thus emulsified ink can "hang back" due to a high viscosity when emulsified. In extreme cases the ink will cease to flow onto the printing press. It is known that pigment compositions have a significant effect on this hang back phenomenon.

It has now been found that these problems can be overcome and outstanding effects can be achieved when using the new organic pigment compositions hereinafter described which comprise a particular combination of additives for the preparation of oil-based lithographic printing inks."

The discussion in the instant Specification beginning with the last paragraph of page 6, and in the instant Examples detail specific advantages of the instant inks. Applicants believe that the examples provided are enough to show the value of the invention in this arena.

Thus, the instant invention provides a colorant composition and a lithographic printing ink employing the colorant composition, which ink is a liquid ink by definition as previously averred by Applicants, which colorant composition contains 5 specified components in specific quantities which together solve the problem identified. The instant claims specify that the colorant "consists essentially of" the components, that is, the colorant contains no other components in an amount that would impact the characteristics of the colorant composition. The ink also contains less than 5% of other additives such as waxes, oils other than the ink vehicle, plasticizers etc.

The instant colorant composition requires 5 components, each present in a fairly tight range:

- (a) 60 to 80% of an organic disazo, metal complex and/or naphthol pigment,
- (b) 2 to 6% of a specific type of hyperdispersant
- (c) 2 to 6% of a specific type of synergistic additive,
- (d) 3 to 8% of an aliphatic or aromatic hydrocarbon distillate fraction of boiling points in the range of 100 to 350°C or triglyceride vegetable oil with fatty acid moieties having a chain length of C12 to 24 carbon atoms, and
- (e) 2 to 30% of rosin or a modified rosin.

Applicants respectfully submit that the selection of each of these 5 required components in the specified amounts for the composition of claim 1 or in the lithographic ink of claim 9 can not be distilled from the generic disclosure of the Tregub which discloses a variety of possible components useful in a solid ink for hot melt printing. There is no specific delineation in Tregub of any component a-e of the instant composition or a five part colorant composition resembling the instant colorant. Further, one finds throughout Tregub only the teaching of broad ranges for the amount of individual components which "should be determined experimentally, but guideline ratios can be found in the typical formulations recommended by Zeneca United Color Technology, Inc". Thus, Applicants contend that the broad disclosure of Tregub does little more than provide a generic listing of commercially known components.

For example, Tregub discloses a pigment composition for use as a mill base or concentrate to be used for a hot melt solid ink comprising any pigment in the general range of 0.2–90%, the examples use 19 - 50% pigment, and "any organic solvent which is thermally stable, has good wetting properties, and is compatible with the other components of the ink." (col. 3 / lines 44 46). The only range disclosed for the solvent is 9–98.59%. All other disclosed components are optional. Conversely, the solvent range of instant claim 1 is 3-8% of specifically identified materials.

Applicants also refer the previously presented discussions concerning the amount of synergist disclosed in Tregub and again respectfully maintain that the instant colorant composition contains a 33% more synergist that Tregub discloses, 1.5 vs 2. Tregub did not disclose that one should use more than a certain amount of synergist, but taught that a certain amount was required for good results. Applicants believe that it is possible that the solid inks of Tregub may have needed colorants containing less synergist. The instant lithographic inks need more and Applicants take the position that this can not be gleaned from Tregub and reflects a real difference between the inks of Tregub and lithographic inks.

In light of the above, and previous discussions, Applicants respectfully aver that Tregub does not direct one to the instant colorant composition and that it is not just one specific amount of a single component or one specific ratio that differentiates the instant composition from the generic disclosure of Tregub. Tregub does not suggest any 5 component mixture similar to the instant composition or provide any teaching that would guide one to the specific materials and specific amounts required therein. Applicants maintain that the instant colorant composition contains 5 separate materials, which are at best generically described Tregub, used in amounts that are either narrow subsets or outside of the amounts disclosed in Tregub. All five must be present and no significant quantities of other materials may be present in the colorant of the instant claims.

Regarding the lithographic printing ink of claim 9, Applicants respectfully note that the ink of claim 9 contains to less than 5% of other additives including inks and plasticizers. The inks of Tregub, which are made from a mill base which is formed into a concentrate then into an ink contain higher amounts of the additives listed, for example, waxes or plasticizers. Again, Applicants believe that this is a physical embodiment of the difference between the hot melt ink of Tregub and the lithographic ink of the instant invention.

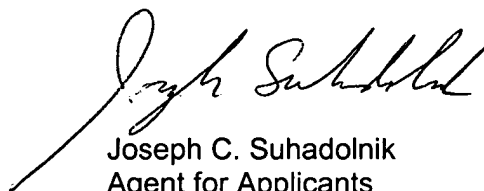
Regarding the process of claim 11, Applicants respectfully point out that the process produces a novel ink using a novel composition which ink provides the benefits alluded to above.

In light of the instant amendments and the discussions above and previously submitted, Applicants submit that the limitations of the instant invention can not be reasonably deduced from the disclosure of Tregub. Applicants therefore respectfully aver that the rejections under 35 USC 103(a) over Tregub et.al., US 6,099,631 are overcome and kindly ask that they be withdrawn.

Applicants respectfully submit that all objections and rejections have been addressed and are overcome and kindly ask that they be withdrawn and that claims 1, 9-11 and 13-16 be found allowable.

In the event that minor amendments will further prosecution, Applicants request that the examiner contact the undersigned representative.

Respectfully submitted,



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Selection from Encyclopedia of Polymer Technology vol 12 ( 2001, John Wiley and Sons).